



Tutorial: Object-Oriented Programming

Principles of Programming Languages

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Question 1

- (a) Apply method resolution order of Python 3 to find the class search path of each class in the above class schema? If there are errors in the class search path, please change the order of super class of some class to make all the class search path success.

```
L(O)  = [O] ; L(A) = [A, O]; L(B) = [B, O]; L(C) = [C, O]
L(D)  = [D] + merge(L(A), L(B), [A, B])
      = [D] + merge([A, O], [B, O], [A, B])
      = [D, A, B, O]
L(E)  = [E] + merge(L(A), L(C), [A, C])
      = [E] + merge([A, O], [C, O], [A, C])
      = [E, A, C, O]
L(F)  = [F] + merge(L(D), L(B), L(E), [D, B, E])
      = [F] + merge([D, A, B, O], [B, O], [E, A, C, O], [D, B, E]) ⇒ invalid
L(F)  = [F] + merge(L(D), L(B), L(E), [D, E, B]) = [F, D, E, C, A, B, O] ⇒ valid
```

- (b) If x contains an object of F, which will method foo be called by x.foo() using your successful class schema?
Method of A will be called.